UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

JUL 10 2015

Mr. Marc Fugler
U.S. Army Corps of Engineers
Sacramento District
Regulatory Division, California Delta Branch
1325 J Street, Room 1350
Sacramento, California 95814-2922

Subject: Delta Wetlands Project Supplemental Draft Environmental Impact Statement, San Joaquin and Contra Costa Counties, California [CEQ# 20150154]

Dear Mr. Fugler:

The U.S. Environmental Protection Agency has reviewed the Supplemental Draft Environmental Impact Statement for the Delta Wetlands Project. Our review and comments are pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The Delta Wetlands Project is a proposed water storage project that would involve converting two islands in the Sacramento-San Joaquin Delta (Delta) into reservoirs (reservoir islands) whereby water would be moved on and off the islands each year. Two additional islands (habitat islands) would be converted into wildlife habitat and wetlands to mitigate for the development of the reservoirs. The U.S. Army Corps of Engineers has issued this SDEIS as the previous permit issued under the original EIS has expired. The project proponent, Delta Wetland Properties, is seeking a new USACE permit to fill approximately 2,156 acres of waters of the United States, including wetlands.

In its NEPA review authority and as a cooperating agency, EPA has previously provided comments on the original EIS and on the administrative draft of the current document. EPA has also provided additional comments through our Clean Water Act 404 authority. Several key issues that EPA has raised have not been sufficiently addressed in the SDEIS.

Based on our review of the SDEIS, we have rated the Preferred Alternative – Alternative 2 – and the document as *Environmental Objections – Insufficient Information* (EO-2). Please see the enclosed "Summary of EPA Rating Definitions." Our rating is based primarily on impacts to waters of the U.S., the adequacy of the mitigation plan for these impacts, potential impacts to water quality and beneficial uses in the Delta, and impacts to air quality during construction and operations. We are providing comments about the Clean Water Act 404 (b)(1) alternatives analysis and the ability of the SDEIS to identify the least environmentally damaging practicable alternative. Only the LEDPA can receive a CWA 404 permit. Please find our detailed comments enclosed, which provide recommendations to address these issues as well as our additional concerns.

We appreciate the opportunity to review and comment on this SDEIS, and are available to discuss the recommendations provided. When the SFEIS is released for public review, please send one hard copy and one CD to the address above (Mail Code: ENF 4-2). Should you have any questions, please contact me at (415) 972-3854, or contact Jean Prijatel, the lead reviewer for the project. Jean can be reached at (415) 947-4167 or prijatel.jean@epa.gov.

Sincerely,

Lisa B. Hanf, Assistant Director
Enforcement Division

Enclosures: Summary of EPA Rating Definitions
EPA Detailed Comments

cc: Erin Ragazzi, California State Water Resources Control Board
Carl Wilcox, California Department of Fish and Wildlife
Brian Hansen, U.S. Fish and Wildlife Service
Doug Hampton, NOAA Fisheries

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S. EPA DETAILED COMMENTS ON THE SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR DELTA WETLANDS PROJECT, SAN JOAQUIN AND CONTRA COSTA COUNTIES, CA JULY 10, 2015

Clean Water Act Section 404

The basic and overall project purpose statements identified in SDEIS and Clean Water Act 404(b)(1) alternatives analysis are too restrictive for a CWA 404 permit evaluation under the 404(b)(1) Guidelines.[1] Under the Guidelines, the project purpose must not be so narrow as to preclude consideration of less damaging alternatives. Both the basic and overall purpose statements in the SDEIS limit alternatives to those that use Delta water, and the overall purpose statement names the specific islands on which the water must be stored (page 1-4 and Appendix J page 3-1). EPA notes that the CWA 404 project purpose statement for the proposed project from the 1995 analysis included alternatives within and outside the Delta.

> ***Recommendation***: The SFEIS should use the basic and overall project purpose statements from the 1995 404(b)(1) alternatives analysis, and the current 404(b)(1) alternatives analysis should be updated to evaluate alternatives in light of the 1995 project purpose statement.

The 404(b)(1) alternatives analysis (dated 1995) needs to be fully updated, including all alternatives that were not carried forward previously. Circumstances have changed since 1995 and alternatives deemed not practicable then may be practicable now. The current alternatives analysis states that all alternatives have been updated, however only the analysis from the 1995 document is included for many of the alternatives (Appendix J page 5-1). The document also repeatedly refers to a Sacramento County Superior Court Case that found the alternatives analysis was acceptable under the California Environmental Quality Act. This regional court decision has no bearing on the administration of the federal CWA, and reference to it should be removed from the 404(b)(1) alternatives analysis. Per Section 230.10(a) of the Guidelines, the project applicant must clearly demonstrate that the proposed project is the least environmentally damaging practicable alternative. The outdated analyses in the 1995 document do not demonstrate the proposed project is the current LEDPA.

An updated document should include information on the identified end users' (i.e. water districts) current and projected water needs and their current water supplies. The analysis should then be conducted in the context of the amount of water the project is likely to deliver to the identified end users. For example, the water conservation alternative should analyze whether the identified water districts can implement water conservation practices that would yield the same amount of water (on average) that the proposed project is expected to produce.

> ***Recommendation***: Update the 404(b)(1) alternatives analysis to reconsider all alternatives evaluated in 1995 using current information. Include information on the end users' needs and supplies, and evaluate the alternatives in the context of the amount of water the proposed project is likely to deliver. Include an updated alternatives analysis as an appendix to the SFEIS.

The Compensatory Mitigation Plan, as proposed, is not consistent with the 2008 Federal Mitigation Rule[2] (Rule) nor with modern concepts and methods embodied by the field of restoration ecology. The proposal relies heavily on active water control, includes extensive vegetation management, and allows for farming to continue in some mitigation areas. This level of in-perpetuity management envisioned by the project applicant is not appropriate for compensatory mitigation sites.

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[1] http://water.epa.gov/lawsregs/rulesregs/cwa/upload/CWA_Section404b1_Guidelines_40CFR230_July2010.pdf

[2] water.epa.gov/lawsregs/guidance/wetlands/upload/2008_04_10_wetlands_wetlands_mitigation_final_rule_4_10_08.pdf

Given the scope and size of the proposed impacts, EPA believes this project should employ a watershed approach to mitigation under the Rule. The ultimate goal of a watershed approach is to maintain and improve the quality and quantity of aquatic resources within watersheds through strategic selection of compensatory mitigation sites (40 CFR 230.93(c)). A watershed approach accounts for the interplay among a variety of factors including ecosystem processes (aquatic and terrestrial), landscape position and historical ecology, habitat loss and restoration potential, habitat fragmentation and cumulative impacts, adjacent land-uses and future risks, and the needs of sensitive species.[3]

The two proposed habitat islands would be used to compensate for impacts to waters of the U.S. and to sensitive species such as the Swainson's hawk and sandhill cranes.

Recommendations: Revise the compensatory mitigation approach to employ modern principles of restoration ecology and to minimize the level of long-term operations and maintenance. Mitigation measures should be explored that would achieve the following objectives:

- re-establish and maintain ecosystem processes to the greatest extent possible,
- re-establish aquatic vegetation on the islands that build peat soils and reverse subsidence, and
- create wetlands that contribute to levee stabilization and are capable of sequestering methylmercury and carbon.

Further, EPA recommends exploring conservation opportunities for Swainson's hawk and sandhill cranes within the grasslands and pasturelands surrounding the Stone Lakes National Wildlife Refuge and the Cosumnes River Preserve. These areas are vulnerable to development and securing mitigation lands there would add great value to the Refuge and Preserve, respectively. These opportunities would be consistent with the watershed approach referenced above, and provide additional flexibility on the management of the habitat islands.

EPA is available for consultation on improving the compensatory mitigation plan and bringing it into compliance with the 2008 Federal Mitigation Rule.

Water Quality

The SDEIS explains that, in addition to other variables, the project diversions would occur at times when the 2 parts per thousand salinity isohaline ('X2') is positioned downstream of Chipps Island measured at 75 km from the Golden Gate (page 2-37; and Figure 1 below). This metric was selected to ensure that water diverted onto the islands is of low salinity and to ensure that diversions would be unlikely to have negative impacts on fish species (page 3.11-5). However, EPA believes that an X2 of 75 may not be the best location for creating a low salinity zone that supports fish populations, nor a reliable value upon which to trigger project diversions. Wet years have lower seasonal X2 values (fewer kilometers) than dry years as higher flows push the 2ppt isohaline westward toward the Golden Gate. Spring typically has lower X2 values and summer and fall have higher X2 values. Estuarine habitat that supports native resident and migratory fishes has X2 values that vary annually and seasonally consistent with the California climate.

The project applicant proposes to divert water to the reservoir islands when X2 is 75 km in a *below normal* or *dry* year. The SDEIS also indicates that the project diversions themselves may impact the

[3] The Delta Landscapes Project could provide the project proponent with a unique tool for building a modern Compensatory Mitigation Plan. http://www.sfei.org/projects/delta-landscapes-project

location of X2 (page 3.11-5). EPA is concerned that this diversion trigger may degrade water quality in the Delta by allowing salinity intrusion, and adversely affect aquatic life. We believe that water resource managers should allow the location of X2 to vary seasonally and annually with the amount of precipitation received by California, and strive to place the low salinity zone between Carquinez Strait and Chipps Island (e.g., between 55 and 75 km).

Recommendation: The SFEIS should evaluate the forecasted monthly average X2 under the proposed project alternatives and compare the results to baseline conditions, providing a clear analysis of how X2 would be modified as a result of project operations.

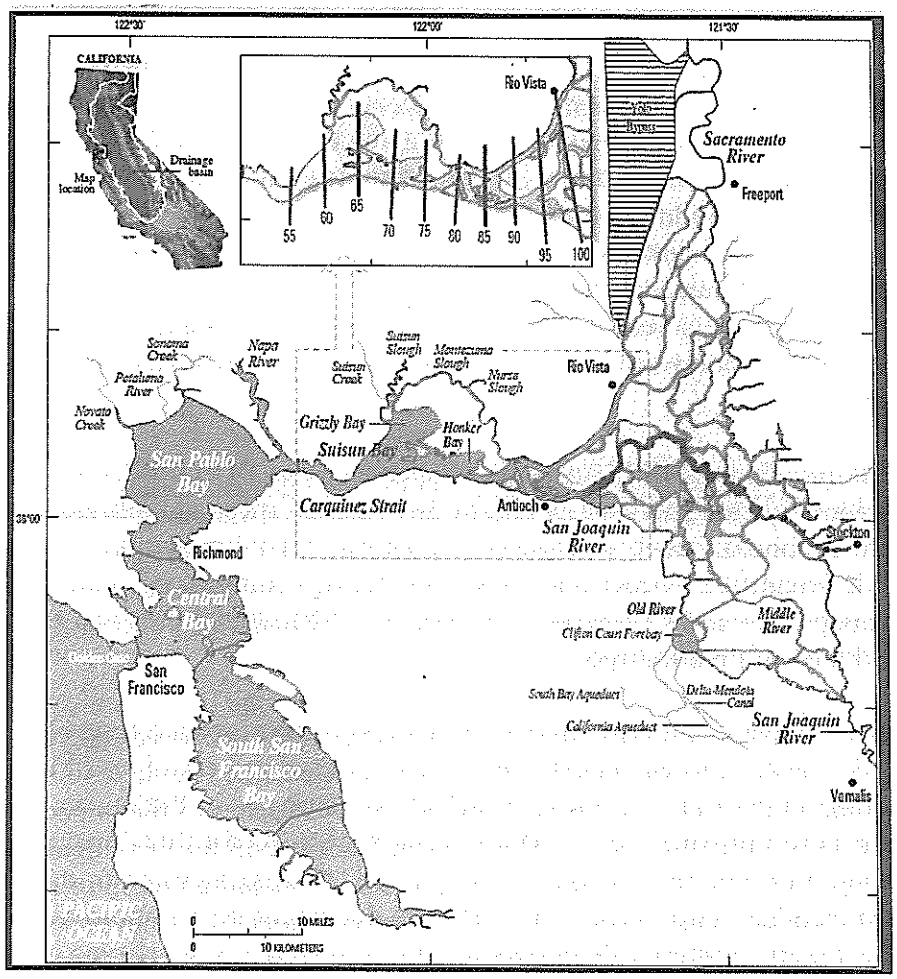

Figure 1. Isohaline positions (X2) measured at nominal distances (in kilometers) from the Golden Gate Bridge along the axis of the estuary. New map by DeLio (2011) adapted from Jassby et al. (1995). An isohaline is a line on a map connecting all points of equal salinity in an estuary, and it moves eastward (landward) and westward (seaward) depending on the flows and tides.

As an environmental commitment recommended by the California Department of Fish and Wildlife, the project applicant has agreed to provide a conservation easement to compensate for a potential shift in X2 (page 2-29). The easement would be on the western tip of Chipps Island and would include approximately 200 acres of brackish tidal wetlands. The document is not clear on how placing a conservation easement on Chipps Island would compensate for the upstream migration of X2 and

salinity intrusion. Additional tidal marsh restoration is not proposed, nor are any other measures that might attenuate the tidal prism and mitigate for upward migration of X2 and salinity intrusion.

> ***Recommendation***: The SFEIS should explain how a conservation easement on Chipps Island will offset the tidal prism or otherwise reduce salinity intrusion compared to existing conditions.

The Operations Criteria written in 1997 and incorporated into the current document include discharge limits for water temperature and dissolved oxygen (DO) (pages 3.11-5 and 6). The SDEIS states that these criteria are required to meet the previous U.S. Fish and Wildlife Service and National Marine Fisheries Service Biological Opinions for the project (page 3.11-41). The scientific basis for the proposed temperature and DO criteria are not provided and EPA is concerned that the criteria are not protective of aquatic life beneficial uses. The temperature criteria allow for a 20 degree F differential between reservoir water and receiving water in the adjacent channels. They also allow for a weekly average increase in receiving water temperatures of 4 degree F when average water temperatures are between 55 and 66 degrees. This would allow for considerable daily temperature fluctuation that could adversely affect aquatic life. In addition, the SDEIS only evaluates temperature and DO impacts to salmonids and does not include a discussion of smelt and other native fishes. The maximum temperature tolerated by Delta smelt is estimated to be approximately 77 +/- 4 degrees F, and the proposed temperature criteria allow weekly average temperature increases to be at or near temperature maxima for Delta smelt. The averaging period would allow for temperatures to fluctuate to values substantially higher than 77 degrees.[4]

> ***Recommendations***: In the SFEIS, evaluate temperature and DO impacts from the project on all State- and federally-listed species as well as other native fishes, and discuss the potential impacts in terms of the proposed weekly averages and potential daily fluctuations. Further, the SFEIS should provide scientific evidence and current modeling estimates to demonstrate that the proposed temperature and DO criteria are protective of beneficial uses and sensitive aquatic species at all levels of the foodweb.

The SDEIS provides estimates of methylmercury formation on the proposed reservoir and habitat islands (Table 3.11-6), and acknowledges that the project as described could result in potential increased methylmercury loading in the Delta. It does not provide any estimates of the impact of those loads on surrounding waterways or mitigation areas. The proposed mitigation for this impact is to "follow guidelines from proposed Delta Total Maximum Daily Load" (including monitoring) and incorporate control measures into wetland design (page 3.11-41). The document does not provide any specific information as to how methylmercury formation will be minimized, nor what type of monitoring will be done. It appears to rely on the future development of procedures and techniques.

> ***Recommendation***: The SFEIS should discuss the potential impact of the identified methylmercury loads on the surrounding waterways and habitats, and describe how methylmercury formation will be minimized on each island and the type of monitoring that will be conducted.

The SFEIS states that monitoring and implementation plans for water temperature and dissolved oxygen will be submitted for approval after the project is permitted but before construction begins (page 2-27).

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[4] Christina Swanson, Turid Reid, Paciencia S. Young, Joseph J Cech Jr (2000). *Comparative environmental tolerances of threatened delta smelt (Hypomesus transpacificus) and introduced wakasagi (H. nipponensis) in an altered California estuary. Oecologia (2000) 123:384-390.*

Given the importance of monitoring on project operations and therefore project impacts, the monitoring and implementation plans should be approved before the project is permitted. In addition, the project applicant and regulators should consider whether preliminary monitoring would be useful to improve the precision of estimated operational windows and constraints. For example, preliminary monitoring may provide additional information on when sensitive species are near the intake locations and under what conditions.

> ***Recommendation***: The SFEIS should describe the monitoring protocol for characterizing water quality in reservoirs and receiving waters so it can be compared with water quality criteria. The project applicant should submit the monitoring and implementation plans to regulatory agencies for review and approval prior to project permitting.

Aquatic Life

The SDEIS concludes that the proposed project would have significant and unavoidable negative impacts to juvenile Chinook salmon, juvenile steelhead, Delta smelt, longfin smelt, and green sturgeon resulting from proposed project diversions and freshwater releases even after all mitigation measures have been implemented (pages 3.4-52 through 58). Long-term and recent sharp declines in resident and migratory fishes illustrate a deficiency in protections for aquatic life across the Bay Delta ecosystem. The potential for the project to degrade water quality and impair aquatic life beneficial uses is not consistent with the federal Clean Water Act.

The SDEIS proposes to reduce the diversion rate of freshwater by 50% when smelt are in the vicinity of the pumps (page 2-28) as an environmental commitment, but it is not clear from the document what effect this operational approach will have on Delta smelt and other sensitive fishes. This reduction is not discussed in the Aquatic Resources section's description of impacts and mitigation.

> ***Recommendation***: The SFEIS should describe what effect a 50% reduction in the rate of freshwater diversion will have on sensitive species, including Delta smelt, longfin smelt, and salmonids; and whether this reduction will be adequate to reduce entrainment of each species, and if so, by how much.

Air Quality

In a discussion about the need for a conformity analysis, the SDEIS lists six mitigation measures for construction impacts to air quality intended to bring emissions below the *de minimis* thresholds (page 3.3-19). Following this list, the text describes Table 3.3-6 as showing the annual criteria air pollutants and precursor emissions for construction activities for Alternatives 1 and 2 *after* mitigation; however, the emissions numbers on the table are identical to the pre-mitigation numbers shown in Table 3.3-5. A similar problem appears in the tables describing impacts for Alternative 3. While the text refers to emissions reductions through mitigation, the tables as presented illustrate that the mitigation measures do not reduce criteria air pollutants and precursor emissions. The SDEIS concludes that Alternatives 1 and 2 would require a conformity analysis because construction-related emissions would continue to exceed the nitrogen oxides (NOx) de minimis thresholds even with the proposed mitigation. Alternative 3 would require a full conformity analysis because it would exceed thresholds for reactive organic gasses (ROG), NOx, and carbon monoxide (CO) emissions.

> ***Recommendation***: Revise Tables 3.3-5, 6, 7, and 8 to accurately reflect the predicted emissions numbers pre- and post-mitigation. Clarify which mitigation measures would be responsible for which reductions in emissions. Include a general conformity analysis for the selected alternative in the SFEIS.

The SDEIS states that there would be an increase in ROG emissions during operation (Effect AIR-4, page 3.3-15), but concludes the impact to be less than significant because the increase would not exceed applicable emissions thresholds. The emissions for operations are calculated based on kilowatt-hours per year (Appendix E, Tables 9 and 10) and compared to the pounds per day thresholds for the Bay Area Air Quality Management District. EPA notes that the project pumps would not be operated at the same intensities throughout the year, therefore the annualized calculations do not show when impacts to air quality and public health may occur.

> ***Recommendation***: Provide tables in Appendix E showing projected emissions throughout the year at different phases of operation; analyze these results against the BAAQMD pounds per day thresholds.

In addition to ROG emissions during operation, the SDEIS states that increased ROG and NOx emissions during construction will be significant and unavoidable even after implementing proposed mitigation (page 3.3-14). Three mitigation measures are proposed: perform routine maintenance of construction equipment, choose borrow sites close to fill locations, and prohibit unnecessary idling of engines. The SDEIS states that no other feasible mitigation measures are available to further reduce this effect to a less-than-significant level.

In the discussion about general conformity, the SDEIS provides additional mitigation measures for NOx emissions during construction including the purchase of emissions offsets through the San Joaquin Valley Air Pollution Control District and BAAQMD and using electrically-powered pumps rather than diesel. The electrically-powered pumps are proposed as an "if necessary" measure should coordination with SJVAPCD and BAAQMD prove inadequate in reducing emissions to less than the daily and annual significance thresholds (page 3.3-15). EPA believes there are additional measures that could further reduce this impact prior to the purchase of emissions offsets.

> ***Recommendation***: EPA recommends implementing the use of electrically-powered pumps as mitigation prior to determining the need for emissions offsets. If the project applicant chooses to use diesel, then cleaner diesel practices should be committed to in the SFEIS. EPA has a list of recommendations on our Clean Diesel website.[5] If it is determined that offsets need to be purchased, include a copy of the voluntary emission reduction agreement (VERA) in the SFEIS. In addition to the proposed mitigation measures, EPA recommends the following measures to further reduce ROG and NOx emissions during construction.
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> Mobile Source Controls:
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> - Minimize use, trips, and unnecessary idling of heavy equipment.
> - Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, where applicable, and to perform at verified standards applicable to retrofit technologies.
> - Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. The California Air Resources Board has a number of mobile source anti-idling requirements which should be employed (http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm).

[5] http://www.epa.gov/cleandiesel/technologies

- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.
- In general, commit to the best available emissions control technologies for project equipment:
  - *On-Highway Vehicles* - On-highway vehicles used for future covered activities should meet or exceed the US EPA exhaust emissions standards for model year 2010 and newer heavy-duty on-highway compression-ignition engines (e.g., long-haul trucks, refuse haulers, etc.).[6]
  - *Nonroad Vehicles & Equipment* - Nonroad vehicles & equipment used for all covered activities should meet or exceed the US EPA Tier 4 exhaust emissions standards for heavy-duty nonroad compression-ignition engines (e.g., construction equipment, nonroad trucks, etc.).[7]
  - *Low Emission Equipment Exemptions* – The equipment specifications outlined above should be met unless: 1) a piece of specialized equipment is not available for purchase or lease within the United States; or 2) the relevant project contractor has been awarded funds to retrofit existing equipment, or purchase/lease new equipment, but the funds are not yet available.
  - *Advanced Technology Demonstration & Deployment* – demonstrate and deploy heavy-duty technologies that exceed the latest US EPA emission performance standards for the equipment categories that are relevant for the covered activities (e.g., plug-in hybrid-electric vehicles - PHEVs, battery-electric vehicles - BEVs, fuel cell electric vehicles - FCEVs, etc.).

Administrative controls:

- Prepare an inventory of all equipment prior to construction.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.

Climate Change

On December 24, 2014, the Council on Environmental Quality released revised draft guidance for public comment that describes how federal departments and agencies should consider the effects of greenhouse gas emissions and climate change in their NEPA reviews. The revised draft guidance supersedes the draft greenhouse gas and climate change guidance released by CEQ in February 2010. This new draft guidance explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated greenhouse gas emissions, and the implications of climate change for the environmental effects of a proposed action.

The climate change section in the SDEIS discusses greenhouse gas emissions during construction and operation, but does not include a discussion of likely impacts from climate change on the project. Sea level rise is mentioned as a risk in several places throughout the document, but no in-depth discussion is provided. The floodplain management section states that the project's levees would be maintained to address sea-level rise, but also states that "future sea level rise predictions are not included in surface water calculations used in development of the proposed levee design" (page 3.9-2).

[6] http://www.epa.gov/otaq/standards/heavy-duty/hdci-exhaust.htm
[7] http://www.epa.gov/otaq/standards/nonroad/nonroadci.htm

Recommendations: Update, in the SFEIS, the Regulatory Framework section of the Greenhouse Gas Emissions chapter to reflect the new CEQ draft guidance.

In the SFEIS, add a discussion of the impacts of climate change on the project. Include regionally-specific studies to gauge the expected changes in sea-level, storm surges, drought, and flooding from climate change. EPA recommends reviewing the Bureau of Reclamation's September 2014 "Sacramento and San Joaquin Basin Climate Impact Assessment."[8] Information from climate change studies and reports should be considered in project design to promote climate change resiliency.

In describing project operations, the SDEIS indicates that modeling for historic water years 1922-2003 demonstrates that the project would have no diversions in 20% of the years, partial diversions for 10% of the years, and filled reservoirs for 70% of the years (page 2-50). These historic years do not take into account the recent four years of drought nor projected climate change impacts on project operations. Given the current prolonged drought and expected changes to precipitation and weather patterns driven by climate change, water supply projections should include the likelihood of multi-year, and even decadal droughts when estimating the frequency and timing at which the reservoirs would be utilized.

Recommendations: In the SFEIS, account for the potential impact of long-term drought conditions and climate change on water supply and project operations.

Cumulative Impacts

EPA has recommended that the State Water Resources Control Board strengthen water quality standards and increase protections for aquatic life beneficial uses through the comprehensive update of the Bay Delta Water Quality Control Plan,[9] and such standards may affect the volume of freshwater available to the project proponent in the future. The SDEIS includes a discussion of the 1995 Water Quality Control Plan for the San Francisco Bay / Sacramento-San Joaquin Delta Estuary (page 2-3), but does not include a discussion of the development of an updated plan expected to be released in 2015.

Recommendation: If the Bay Delta Water Quality Control Plan is updated prior to the completion of the SFEIS for this project, the regulatory framework section for cumulative impacts should include a discussion of changes to the Plan and its impacts on project operations.

As discussed in the SDEIS, the Bay Delta Conservation Plan has been modified to separate the conveyance facility and habitat restoration measures (page 3.0-9). The proposed California WaterFix dual conveyance facility lists much of Bouldin Island as a location for stockpiling material excavated from the tunnels, and it is not clear how the stockpiling of this material will impact the mitigation proposed on this island for the Delta Wetlands project. California WaterFix also proposes locating a "main construction shaft" on Bacon Island. It is unclear if construction and operation of such a feature would be compatible with the reservoir island proposed for the current project.

Recommendation: In the SFEIS, disclose what impacts, if any, the California WaterFix proposed stockpiling of material on Bouldin Island will have on the proposed mitigation project on that island for the Delta Wetlands project; and the compatibility of the California WaterFix construction shaft with operation of the reservoir island.

[8] http://www.usbr.gov/WaterSMART/wcra/docs/ssjbia/ssjbia.pdf

[9] http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/index.shtml

Conversion of islands within the Delta to reservoirs could preclude future mitigation and restoration activities, including mitigation for the California WaterFix dual conveyance facilities, and eliminate opportunities to reverse subsidence on the sunken peat-based islands using wetlands restoration methodologies that promote the sequestration of greenhouse gasses and methylmercury.

> ***Recommendation***: The cumulative impacts section of the SFEIS should explain that there are opportunity costs to advancing this project as it could preclude the implementation of mitigation and restoration projects on the subject islands and potentially create indirect effects on adjacent islands.

Monitoring Plans

The project description, environmental commitments, and mitigation measures include several monitoring plans in various documents. The design and implementation of a comprehensive monitoring plan will be essential toward ensuring that the project does not have unintended adverse impacts to the aquatic environment.

> ***Recommendation***: Create a single stand-alone document that contains all monitoring plans, including schedules, responsibility for conducting the monitoring, and which agencies would receive the resulting data. If monitoring plans for certain activities are not yet available, please create a placeholder and provide an estimate of when plans will become available. Include this document as an appendix to the SFEIS.

The project currently relies on the Interagency Ecological Program monitoring or other third party monitoring as triggers for project specific monitoring. These monitoring programs are not guaranteed to operate in their same capacity or in a manner compatible with the proposed project into the future of project operations. In addition, relying on IEP fish monitoring to trigger operational changes for the project could create a significant lag-time between potential *take* events (e.g., entrainment of State- or federally-listed fishes into the reservoir islands) and operational responses to avoid or limit the take. The California Department of Fish and Wildlife fish surveys done through IEP do not provide instantaneous results or results within 24 hours. There may be a period of days when sensitive species are present but the project operators do not have this information and continue to divert water onto the reservoir islands.

> ***Recommendation***: The SFEIS should include a commitment for project specific monitoring during diversion periods. The project should not rely on IEP monitoring to trigger project specific monitoring. The SFEIS should also identify the fish monitoring methods, including target species, locations, frequency, and responsibility.

The SDEIS discusses establishment of a Monitoring Technical Advisory Committee that would make recommendations and provide input on monitoring issues. Final approval for monitoring changes would be made by the appropriate regulatory agency. The ability of the project proponent to implement its environmental commitments and mitigation measures will rely on the activities of this Committee. This Committee is expected to be staffed by volunteers from the regulatory agencies. EPA is concerned that the Committee may not be effectively staffed if it relies on volunteer agency staff time. It is also not clear how the Committee will be coordinated with Delta Operations for Salmonids and Sturgeon, Water Operations Management Team, and Smelt Working Group for Central Valley Project / State Water Project operations.

> ***Recommendation***: Given the importance of the Monitoring Technical Advisory Committee to the project, in the SFEIS please provide agreements with the regulatory agencies to commit staff

time to the Committee's activities. If the project proponent is unable to provide participation agreements, the SFEIS should identify an alternative to the Committee to ensure coordination of agency recommendations and input on monitoring issues. The SFEIS should describe how the Committee – or an alternative – will coordinate with other relevant workgroups.

Reuse of Dredged Material

The SDEIS estimates that approximately 6 million cubic yards of borrow material could be required to construct the levee improvements for the project (page 2-10) and states that most of the material would be taken from construction of the reservoir islands with the remainder from nearby sites (page 3.3-14). The document does not identify specific borrow sites. Reusing dredged material is a shared goal of USACE and EPA.[10] Ongoing USACE projects generate the vast majority of dredged material in the Delta, and past USACE dredging accounts for most of the stockpiles of previously-dredged material around the Delta. This project represents an opportunity to access and reuse stockpiled dredged material.

Recommendations: In the SFEIS, evaluate the suitability of existing USACE dredged material stockpiles for construction of the project. Commit to maximize the use of already stockpiled dredged material.

Seismology and Soils

The SDEIS addresses subsidence in general terms and does not provide a quantitative analysis of how subsidence will change under each alternative. The analysis would benefit from consultation with scientists at the U.S. Geologic Survey's Water Sciences Center[11] to explore whether or not the proposed project will exacerbate subsidence[12] via the placement of water reservoirs atop fragile, peat-based islands in the western Delta where some islands have sunk to a depth of 25 feet below sea level.

Recommendation: In the SFEIS include a quantitative analysis of the potential for the project to cause or exacerbate land subsidence on the reservoir and habitat islands.

The SDEIS does not include a section describing the affected environment and consequences as it relates to seismology because "the project islands are not located in a seismically active area" (page 3.0-5). Other resource sections in the SDEIS acknowledge the distinct seismic risks on the Delta and its complex levee infrastructure. The Agricultural Resources section, for example, states that "a seismic event is the single greatest risk to levee integrity in the Delta" (page 3.2-2).

Recommendation: Reevaluate the need for a seismology section in the SFEIS given the known risks in the region.

[10]National Dredging Team Charter:
water.epa.gov/type/oceb/oceandumping/dredgedmaterial/upload/2003_12_05_oceans_ndt_publications_2003_charter.pdf
[11] http://ca.water.usgs.gov/projects/central-valley/land-subsidence-monitoring-network.html
[12] http://pubs.er.usgs.gov/publication/fs00500